

**ABSTRACT OF THE DISCLOSURE**

A method for making Enhanced Observed Time Difference (E-OTD) measurements with a mobile station in a TDMA (ANSI-136) wireless network. The method includes steps of (a) synchronizing to a neighbor base station and receiving a Digital Traffic Channel (DTC) time slot that is on the same frequency with a desired Digital Control Channel (DCCH) that is to be measured; (b) detecting and decoding a Coded Digital Voice Color Code (CDVCC) in the DTC to obtain a DVCC; (c) verifying that the received signal is a correct signal for receiving a DCCH by comparing the received DVCC with a DVCC that forms a part of a base station neighbor list; and (d) measuring the E-OTD and associating the DVCC, the channel number and hyperband information with the E-OTD measurement resulting in an E-OTD measurement report that is transmitted to a Serving Mobile Location Center (SLMC).

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